

WO 2004/041047 A2

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization International Bureau



533205

(43) International Publication Date
21 May 2004 (21.05.2004)

PCT

(10) International Publication Number
WO 2004/041047 A2

(51) International Patent Classification⁷: A47K 5/00 (74) Agent: FRANK B. DEHN & CO.; 179 Queen Victoria Street, London EC4V 4EL (GB).

(21) International Application Number:
PCT/GB2003/004700

(22) International Filing Date: 31 October 2003 (31.10.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
0225641.0 4 November 2002 (04.11.2002) GB

(71) Applicant (for all designated States except US): KIMBERLY-CLARK WORLDWIDE, INC. [US/US]; 401 North Lake Street, P.O. Box 349, Neenah, WI 54957-0349 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): POWLING, David, James, Sealy [GB/GB]; 6 Victoria Way, East Grinstead, West Sussex RH19 4RY (GB). ZUBILLAGA, Jesus-Maria [ES/ES]; Calle Francisco Santos de Ayala, 9, Alava, E-01520 Durana (ES).

(81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

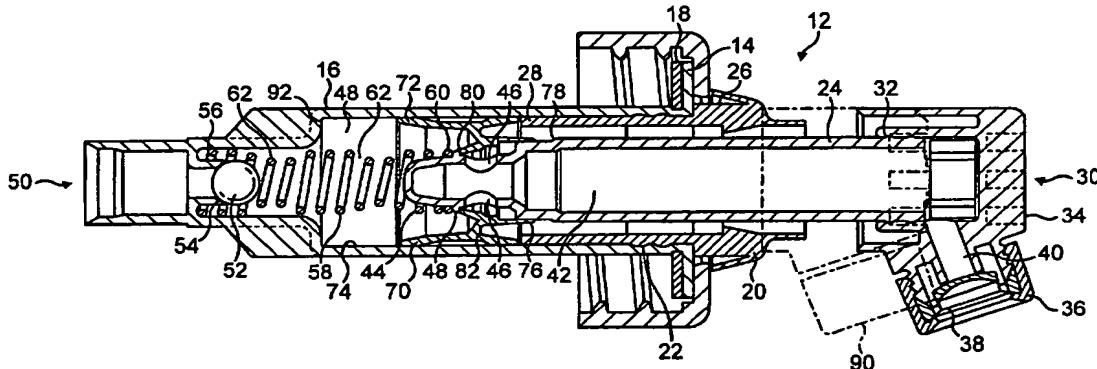
(84) Designated States (regional): ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— without international search report and to be republished upon receipt of that report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: VISCOUS LIQUID DISPENSING PUMP



(57) Abstract: A dispensing pump (12) for a viscous liquid comprises a cylinder (16), a piston (24) mounted for reciprocation within said cylinder (16), an inlet (50) for admitting liquid to be dispensed into said cylinder (16) and a ball check valve (52) arranged selectively to open and close said inlet opening. The ball valve (52) is retained in position by a spring (58) having a variable diameter. The piston (24) has a dispensing passage (40) in fluid communication with said cylinder (16) and with a self sealing dispensing valve (38). The pump (12) further comprises a sliding cut-off valve (70) arranged selectively to open and close fluid communication between the piston dispensing passage (40) and the cylinder (16) as the piston (24) reciprocates within the cylinder (16).